

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An ink jet printing device with a head or with heads of parallel or serial-parallel type, comprising:

a plurality of ejection modules each having chambers adapted for containing ink and heating elements adapted for commanding ejection of the ink, the chambers spaced apart from one another along a ~~direction of printing~~ an axis at a constant pitch,

a nozzle plate including ejection nozzles located on a first side of the ejection modules, the ejection nozzles aligned ~~along the direction of printing~~ with the chambers at the constant pitch,

a support common to the ejection modules and located on a second side of the ejection modules, the support comprising a base plate of rigid material that defines through its thickness an elongated feeding duct for the ink, wherein the feeding duct extends substantially parallel to the ~~direction of printing~~ axis, and

a hydraulic seal forming a direct hydraulic ~~tight~~ connection between the ejection modules and the feeding duct,

wherein the ejection modules are mounted side by side on said ~~support~~ base plate and ~~with the chambers arranged in a line along the direction of printing and in~~ direct hydraulic connection with the feeding duct, whereby the ejection nozzles and the chambers on the plurality of ejection modules are aligned with one another along the axis at the constant pitch.

2. (Previously Presented) The device according to claim 1, wherein said hydraulic seal comprises a lamina mounted between the modules and, through a frame, the support.

3. (Currently Amended) The device according to claim 1, ~~further comprising a~~ wherein the nozzle plate ~~forming~~ forms a hydraulically tight, upper closing surface for said chambers, wherein the ejection nozzles are formed in the nozzle plate and are in hydraulic connection with corresponding chambers of the ejection modules.
4. (Currently Amended) The device according to claim 1, further comprising a secondary tank in hydraulic connection with the feeding duct and integral with said base plate, capable of receiving a fill of ink.
5. (Currently Amended) The device according to claim 1, further comprising an elastic joint filler for a removable cartridge and in which said joint allows freedom of movement between said base plate and said cartridge and has a filter function for the ink of the cartridge.
6. (Currently Amended) The device according to claim 1, wherein said feeding duct is a slot-shaped aperture extending ~~in the direction of printing~~ along the axis ~~which the modules are disposed.~~
7. (Previously Presented) The device according to claim 2, wherein said chambers are in hydraulic connection with a front of the module and in which a counterpart is provided of the same thickness as the modules, mounted on the base plate parallel to the front of the modules, delimited by the lamina or the nozzle plate and connected to the duct, defining a passage for the ink for said chambers.

8. (Previously Presented) The device according to claim 7, wherein said chambers are defined as notches in a polymerizable film deposited on a die of the module and in which the nozzle plate is attached by polymerization, with said film on the modules and with an adhesive on said counterpart.
9. (Previously Presented) The device according to claim 1, wherein the base plate supports electric interfacing circuits for said modules.
10. (Previously Presented) The device according to claim 3, wherein said nozzle plate supports electric interfacing circuits for said modules.
11. (Previously Presented) The device according to claim 1, wherein the plurality of modules are arranged in multiple rows for a plurality of inks, wherein said rows of modules are arranged in an array on a support plate which defines feeding ducts for the chambers of the modules arranged in the multiple rows.
12. (Currently Amended) The device according to claim [[1,]] 11, wherein said support plate and said modules define the head or the heads of the printing device, and the printing device is adapted to move the head or the heads back-and-forth along the ~~direction of printing~~ axis with respect to the print medium at a printing resolution greater than the physical resolution of the pitch between the nozzles.

13. (Currently Amended) A manufacturing process for producing an ink jet printing device with heads of parallel or serial parallel type, comprising a plurality of ejection modules each having a first side, a second side, and chambers adapted for containing ink and heating elements adapted for commanding ejection of the ink, the chambers spaced apart from one another along ~~a direction of printing~~ an axis at a constant pitch, said process comprising:

a – providing a support common to the ejection modules on the second side of the ejection modules, the support defining and which defines an elongated slot-shaped feeding duct for the ink that extends substantially along the ~~direction of printing axis~~;

b – providing a nozzle plate on the first side of the ejection modules, the nozzle plate in which having ejection nozzles ~~are arranged substantially along the direction of printing aligned with the chambers at the constant pitch~~;

c – fixing the ejection modules on said support in ~~hydraulically tight~~ direct hydraulic connection with the feeding duct and with the respective edges of the ejection modules aligned; and

d – hydraulically sealing the nozzle plate on the modules and the support with the nozzle plate forming an upper closing surface of the ejection chambers and of the feeding duct for the ink, wherein the ejection nozzles and the chambers of the plurality of ejection modules are aligned with one another along the axis at the constant pitch.

14. (Withdrawn – Previously Presented) An ink jet printing device with a head or with heads of the serial-parallel type, comprising a plurality of ejection modules, each of which with chambers suitable for containing ink and with associated relative heating elements for commanding ejection of

the ink and with a cartridge of ink for the head or with a cartridge of ink for the heads, said device comprising;

the ejection modules being mounted side by side with the chambers arranged in a line along a same direction,

said modules being capable of alternating motion in relation to the print medium for a printing resolution greater than the physical resolution of the pitch between the nozzles, and said cartridge or said cartridges of ink are connected removably to said modules through an elastic joint or elastic joints for decoupling between the modules and said cartridge.

15. (Withdrawn – Currently Amended) An ink jet printing device with a head or ~~view~~ with heads of the serial-parallel type, comprising a plurality of ejection modules each of which with chambers suitable for containing ink and with associated relative heating elements for commanding ejection of the ink on a print medium, and with a cartridge or with various cartridges of ink for the head or with cartridges of ink for the heads, said device comprising:

the ejection modules being mounted side by side with the chambers arranged in a line along a same direction; and

said print medium is capable of alternating motion in relation to said modules for a serial-parallel printing with printing resolution greater than the physical resolution of the pitch, and said cartridge or said cartridges of ink are hydraulically connected removably to said modules.

16. (Currently Amended) A printer comprising an ink jet device with a head or with heads of serial-parallel type, comprising:

a plurality of ejectors each having chambers adapted for containing ink, ejection nozzles located on a first side of the ejectors, and heating elements adapted for commanding ejection of the ink ~~[[on]]~~ through the ejection nozzles onto a print medium, the ejection nozzles and the chambers spaced apart from one another along a direction of printing aligned with one another along an axis at a constant pitch;

each head comprising a plate ~~which defines~~ located on a second side of the ejectors, the plate defining an elongated feeding duct for the ink, the feeding duct extending along the ~~direction of printing~~ axis; and

said ejectors arranged on said plate with the chambers arranged in a line along the ~~direction of printing, in hydraulic, tight~~ axis in direct hydraulic connection with the feeding duct;

wherein the printer is adapted to move said plate back-and-forth along the ~~direction of printing~~ axis with respect to said print medium synchronous with a continuous feeding motion of said print medium to provide a printing resolution greater than the physical resolution of the constant pitch between the ejection nozzles.

17. (Withdrawn – Previously Presented) A printer comprising an ink jet device with a head or with heads of the parallel or serial-parallel type, comprising a plurality of nozzles and with associated relative heating elements for commanding ejection of the ink, said printer comprising:

said nozzles are side by side and arranged in a line along a same direction; and

in which one or more plugs are provided, capable of movement for sealing the nozzles of the head or the heads and, when printing is concluded.

18. (Withdrawn) A printer comprising an ink jet device with a head or with heads of the parallel or serial-parallel type, comprising a plurality of nozzles and with associated relative heating elements for commanding ejection of the ink, said printer comprising:

said nozzles being side by side and arranged in a line along a same direction; and

in which a bin is provided for a series of paper cards and a skimming and feeding mechanism for skimming said paper cards from the bin and bringing them to a working configuration for the said head or said heads.

19. (Withdrawn) A printer according to claim 18, wherein the skimming and feeding mechanisms for the paper cards are provided by means of skimming roller, a pair of feeding rollers, two intermediate rollers and two pairs of terminal rollers.

20. (Previously Presented) The device according to claim 3, wherein said chambers are defined by notches in a polymerizable film deposited on a die of the module and in which the nozzle plate is attached by polymerization, with said film on the modules and with an adhesive on said counterpart.